

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 030 507 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
23.08.2000 Bulletin 2000/34

(51) Int. Cl.⁷: H04N 1/00

(21) Application number: 00300987.5

(22) Date of filing: 09.02.2000

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 19.02.1999 US 253197

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(54) **System and method for allowing a user to select and scan from a peripheral to a target application on a host system**

(57) A system for scanning data into a host from a peripheral location. A peripheral, such as a multifunction peripheral having printer and scanner functionality, is coupled to a host, such as a personal computer. The system includes a user interface at the peripheral that can be utilized in selecting a desired target, such as an

application or file, at the host. The peripheral user interface also can be used to select a networked site, such as a networked file. Thus, a user can scan desired data at the peripheral to a remote application or file without providing input at the user interface of the host.

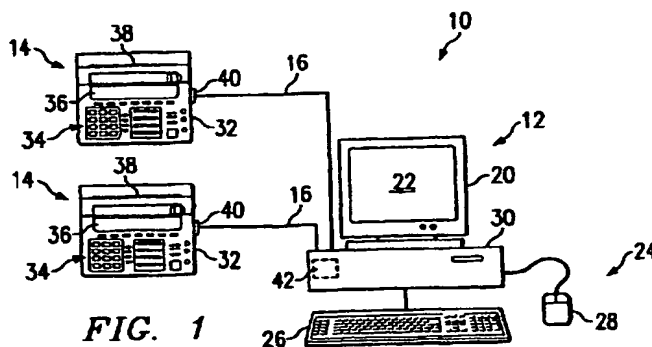


FIG. 1

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Description

[0001] The present invention relates generally to systems utilizing peripherals in combination with a host, such as a personal computer, and particularly to a system in which a multifunction peripheral is utilized to select and scan information into a desired application or file on a host system.

[0002] Peripherals, such as multifunction peripherals, are able to perform simple operations, such as printing, faxing and copying. Normally, multifunction peripherals can be used as stand alone devices without being connected to a host device, such as a personal computer. However, it also is common to connect peripherals to a personal computer via, for instance, parallel ports. This allows a user to utilize at least some of the functionality of the peripheral through the PC interface.

[0003] In some systems in which a personal computer is linked with a multifunction peripheral, an operation, such as scanning, can be initiated by the user from a particular application or applications used on the personal computer. Thus, the user is permitted to scan a document or other data into the open application by utilizing the user interface of the personal computer. However, use of the PC interface can be cumbersome and the procedure for scanning documents into an application can vary between applications. This can lead to frustration and confusion for the user.

[0004] For example, an exemplary sequence of steps for scanning desired data into an application on a personal computer can involve numerous steps. Initially, the application must be started or launched on the computer. The user then goes to the appropriate file menu to select a scanner. Following selection, the user returns to the file menu, and performs an "acquire to" procedure. Next, a TWAIN interface is brought up on the screen, and various preset parameters are established. Following selection of the preset parameters, e.g. color and resolution, the scan is initiated. The multifunction peripheral then scans the document into the TWAIN interface. At this stage, the document is accepted and must be moved to the desired application.

[0005] Systems may vary as to the exact procedure utilized for scanning documents via the PC interface. However, it would be advantageous to simplify these procedures, and to allow a user to scan data, e.g. images or text, into a desired application or file from a user interface of the peripheral.

[0006] The present invention features a system for inputting data from a peripheral to a target on a host system. The system includes a host having a plurality of applications. Additionally, the system includes a peripheral device having a scanner and a user interface. The host and the peripheral device are coupled across a communication link. The communication link allows data to be scanned at the scanner and transferred to a select application of the plurality of applications upon

input from a user at the peripheral device user interface.

[0007] According to another aspect of the invention, a method is provided for inputting data into a desired target on a host system from a peripheral. The method includes utilizing a user interface on a peripheral to select a desired target on the host system. The method further includes initiating a scan of desired data via the user interface, and scanning the desired data. Following scanning, the desired data is transferred to a specific target, e.g. application or file, on the host system.

[0008] According to another aspect of the invention, a method is provided for inputting data to a target site on a host system. The method includes connecting a multifunction peripheral to a host computer. The method also includes utilizing the multifunction peripheral to select a target site on the host computer for receiving a data set. The data set is scanned into the target site from the multifunction peripheral.

[0009] The invention will hereafter be described with reference to the accompanying drawings, wherein like references numerals denote like elements, and:

Figure 1 is a schematic diagram of a host system coupled to a plurality of peripherals, according to a preferred embodiment of the present invention;

Figure 2 is a diagrammatic illustration representing the functionality of a host system connected to a multifunction peripheral, according to a preferred embodiment of the present invention;

Figure 3 is a diagrammatic illustration similar Figure 2 but showing a modified embodiment;

Figure 4 is a diagrammatic illustration similar to Figure 2, but showing a modified embodiment;

Figure 4A illustrates a modification of the embodiment shown in Figure 4;

Figure 5 illustrates an exemplary user interface of a multifunction peripheral; and

Figure 6 is a block diagram illustrating the steps of scanning from a peripheral to a desired target site, according to a preferred embodiment of the present invention.

[0010] Referring generally to Figure 1, an exemplary system 10 is illustrated according to an embodiment of the present invention. System 10 is one example of components that can be utilized for allowing a user to scan information from a remote peripheral directly into a host system. In this embodiment, system 10 includes a host 12 coupled to one or more peripherals 14, preferably multifunction peripherals. Host 12 is coupled to each peripheral 14 by a communication link 16. One or more peripherals 14 can be connected directly to host 12 or placed in communication with host 12 over a network.

[0011] In the exemplary embodiment illustrated, host 12 comprises a personal computer 18. Personal computer 18 may include a display 20 having a screen 22 for displaying and facilitating interaction with a user.

Additionally, personal computer 18 includes a user interface 24 that may comprise for example a keyboard 26 and a mouse 28. Computer 18 also includes a central housing 30 that may enclose components, such as a CPU, a data storage medium, CD drives, disk drives, modems, etc.

[0012] Each peripheral 14 is a device or collection of devices that have scanner functionality, and typically both printer and scanner functionality. Other functions, such as fax functions, also may be included in one or more of the peripherals 14. In the embodiment illustrated in Figure 1, each peripheral 14 can be assumed to be a multifunction peripheral having printer, scanner and fax functionality, combined in a single housing 32. However, the peripheral 14 need not have all of its functions combined in a single unit.

[0013] Each peripheral 14 also includes a user interface 34 through which a user may control the operation of the various functions of that peripheral. Typically, each peripheral 14, and specifically each interface 34, includes a display screen 36 for displaying certain operational parameters or eliciting appropriate input from a user. A wide variety of paper trays or feeders 38 may be used to deliver one or more sheets or documents to the multifunction peripheral for such operations as scanning, printing or sending facsimile transmissions. It should be noted that peripheral 14 may have a wide variety of shapes, structures, capacities and user interfaces.

[0014] Communication link 16 also may comprise a variety of forms. In the illustrated embodiment, each communication link is a hard wire link that interfaces with a parallel port 40 of peripheral 14 and a corresponding parallel port 42 of host 12. However, communication links 16 may comprise a variety of other forms that are able to transmit data between host 12 and a peripheral 14. For example, communication link 16 may be formed not only by direct wiring, but also by optical fibers, RF communication links, a variety of network applications as well as other data transfer forms.

[0015] Referring generally to Figure 2, a peripheral 14 is diagrammatically illustrated as connected to host 12. In this example, peripheral 14 includes at least a scanner functionality 44 and a printer functionality 46. Additionally, the peripheral may include a fax functionality 48. The scanner, printer and fax functionalities can be selected and controlled by the user interface 34.

[0016] Host 12, such as the exemplary personal computer 18, includes a CPU or processor 50 that is utilized for control of the various tasks required of personal computer 18. Additionally, host 12 includes a memory medium 52 on which data may be stored.

[0017] Host 12 also includes at least one and preferably a plurality of applications. For purposes of description, the host 12 illustrated in Figure 2 is illustrated as having three applications 54, 56 and 58. However, numerous additional applications for a variety of desired tasks potentially may be utilized on a host 12.

For example, if host 12 comprises personal computer 18, a variety of applications, such as word processing applications, drawing applications, spreadsheet applications, and numerous other applications may be utilized.

[0018] In any of the applications 54, 56 or 58 it may be desirable to import data from other documents or items. A typical procedure for accomplishing this desired task has been to connect host 12 to a scanner and to utilize interface 24 of host 12 to scan and import the data into the application. However, existing procedures have been cumbersome, as explained above. Thus, the present invention permits a user to transfer data scanned at peripheral 14 into the desired application 54, 56 or 58 on host 12 without utilizing host interface 24. The user may control the scanning of data into the desired application from peripheral interface 34 at peripheral 14.

[0019] As illustrated in Figure 3, peripheral 14 can also be used to scan a desired data set into a storage file 60. If host 12 comprises personal computer 18, storage file 60 may reside in, for instance, a hard drive. Alternatively, storage file 60 can be a networked file, as illustrated best in Figure 4. In the latter embodiment, host 12 is connected to a network 62 which, in turn, is connected to a storage device, such as a server 64. Peripheral 14 may be coupled to host 12 or directly to network 62 as illustrated in Figure 4A. If peripheral 14 is connected directly to network 62, data transmitted to a specific storage file 60 must be properly addressed for transmission to either host 12 or the networked storage medium 64.

[0020] Referring generally to Figure 5, an exemplary peripheral user interface 34 is illustrated. It should be noted that the present invention does not rely on a specific user interface and, accordingly, a wide variety of interfaces potentially can be used. However, one exemplary embodiment of peripheral user interface 34 is illustrated in Figure 5.

[0021] Peripheral interface 34 utilizes a variety of input keys, such as function initiation keys 70. By way of example, function initiation keys 70 may include a scan key 72, a copy key 74 and/or a fax key 76. When a function, such as "scan" is selected by pressing scan key 72, a variety of preset parameters may be selected via a plurality of input keys 78. For example, certain input keys 78 may control quality of scan, paper size, contrast, darkness and potentially a variety of other parameters, as are available on conventional peripherals. Also, the display screen 36 can be used to elicit various inputs from a user by a plurality of prompts 80. For example, a menu 82 may be displayed that permits a user to select various parameters, via input keys 78, that relate to the function, e.g. scanning, to be performed.

[0022] Additionally, peripheral interface 34 is utilized to select the desired application 54, 56 or 58 or the desired storage file 60 into which the subject data set is

to be scanned. There are a variety of methods that can be used to select the desired application or storage file. For example, a plurality of selection keys 84 can be dedicated to specific applications and/or files on host 12. Actuating one of the selection keys 84 effectively selects a specific corresponding target site, e.g. application or file. Alternatively, the user can be allowed to establish which target sites, e.g. applications or files, that he may want to scan documents or other items into. This information can be transmitted to peripheral 14 across its corresponding communication link 16 for storage until altered by the user. Preferably, the host is configured to receive input from the user as to which files or applications have been selected for direct transfer of data from the peripheral.

[0023] Once the desired applications and/or files are established at the peripheral 14, display 36, and specifically prompts 80, also can be used to prompt the user to select the desired application. For example, the desired target sites preferably are established as a submenu 83 of menu 82. This allows a user to select a target site, if any, while establishing the preset parameters related to the scan function. Following selection of the desired preset parameters and the desired target site, the user simply presses an actuation key, e.g. a start key 86, to initiate the scanning of desired data to a specific application or file on host system 12. It should be noted that host system 12 also can include networked files that may be located at a separate storage medium, such as server 64.

[0024] Upon actuation of start key 86, an alert signal is sent from peripheral 14 over communication link 16 to host 12. Upon receipt of the alert signal, processor 50 outputs a query signal to peripheral 14, via communication link 16. The query is utilized to ascertain the various preset parameters regarding the specific function initiated by the user, including the application or file into which the desired data set should be scanned.

[0025] Once the preset parameters are obtained by host 12, the data set, e.g. document, is scanned by scanner 44 and transferred to memory medium 52. Here, processor 50 performs any required data manipulation such as that required by the preset parameters, and sends the data to the desired application or file. Thus, desired information can readily be scanned into a desired target site on a host system 12 by utilizing a peripheral interface 34.

[0026] During manipulation of the data, it may be necessary to convert the data into a form readily usable by the target application. For example, if the application, such as application 56, is a text based application, then images scanned by scanner 44 must be converted into a text file. For example, optical character recognition (OCR) may be used during scanning of images to facilitate conversion of the images into an appropriate text file instead of into a bit map, thereby allowing the data to be edited in the text based application. Preferably, the scanned information is passed to the target application

in the best form for use in that application.

[0027] A specific exemplary operation of system 10 has been set forth in block diagram format in Figure 6. The operation is initiated when scan key 72 is actuated (see block 90 of Figure 6), and various parameters related to the scanned data are set via input keys 78 (see block 92). The preset parameters may either be default values or values specifically selected via input key 78. Depending on the type of user interface 34, the parameter selections may be elicited from a user via prompts 80 in a menu 82.

[0028] Following the selection of preset parameters, a target site, such as a specific application or file into which the desired data is to be scanned, is selected (block 94). If a menu based prompting is utilized, the various selections regarding applications and/or files into which the information may be scanned can be presented to the user by virtue of submenu 83.

[0029] After selection of the target site and any other desired preset parameters, the scan is initiated by actuating start key 86 (see block 96). Pressing start key 86 causes an alert signal to be sent to host 12 (see block 98). Upon receipt of the alert signal, host 12 queries the peripheral 14 to ascertain the preset parameters, including the target site into which the desired data is to be scanned (see block 100).

[0030] After obtaining the parameters related to the data to be scanned, the data set, e.g. text and/or image, is scanned by scanner 44 and transmitted to host 12, specifically into memory medium 52 (see block 102). Here, the data may be manipulated according to the various preset parameters (see block 104) and then transmitted to the desired target site, e.g. application 54, 56, 58 or file 60 (see block 106). At this stage, the data set is ready for use in the target application or properly stored at the desired target file.

[0031] It will be understood that the foregoing description is of preferred embodiments of this invention, and that the invention is not limited to the specific forms shown. For example, a variety of hosts may be utilized in the system; a variety of peripherals, including multifunction peripherals having copying, printing and faxing capabilities, can be employed; the communication link can be provided in a variety of forms; the methods of data transfer can be adjusted or changed, as would be understood by those of ordinary skill in the art; the peripheral user interface as well as the host user interface can take a variety of forms; and various processors and memory media can be utilized in the host system for controlling the transfer of data as well as the manipulation of data. These and other modifications may be made in the design and arrangement of the elements without departing from the scope of the invention as expressed in the appended claims.

Claims

1. A system for inputting data from a peripheral to a

target on a host system, comprising:

- a host having a plurality of applications;
a peripheral device having a scanner and a user interface; and
a communication link through which the peripheral is coupled to the host, wherein data may be scanned at the scanner and transferred to a select application of the plurality of applications upon input from a user at the user interface.
- 2. The system as recited in claim 1, wherein the host includes a plurality of files in which data may be stored, wherein data may be scanned at the scanner and transferred to a select file of the plurality of files upon input from the user at the user interface.
- 3. The system as recited in claim 1, wherein the user interface includes a plurality of input keys.
- 4. The system as recited in claim 3, wherein the user interface includes a display screen.
- 5. The system as recited in claim 1, wherein the peripheral device comprises a printer.
- 6. The system as recited in claim 2, further comprising a network to which the host is coupled, and a storage medium coupled to the network, wherein data may be scanned at the scanner and transferred to the storage medium upon input from the user at the user interface.
- 7. The system as recited in claim 1, wherein the peripheral device is coupled directly to the network.
- 8. The system as recited in claim 1, wherein the host comprises a personal computer.
- 9. A method for inputting data into a desired target on a host system from a peripheral, comprising:
 - utilizing a user interface on a peripheral to select a desired target on the host system;
 - utilizing a scan of desired data via the user interface;
 - scanning the desired data; and
 - transferring the desired data to the desired target.
- 10. The method as recited in claim 9, wherein transferring includes transferring the desired data set to an application on the host system.
- 11. The method as recited in claim 9, wherein transferring includes transferring the desired data set to a selected file for storage.
- 12. The method as recited in claim 9, wherein transferring includes transferring the desired data set to a networked file.
- 13. The method as recited in claim 9, further comprising establishing a plurality of parameters via the user interface, regarding the desired data set.
- 14. The method as recited in claim 13, further comprising providing an alert signal to the host system upon an appropriate input at the user interface; and in response to the alert signal, providing a query to the peripheral to determine the desired target.
- 15. The method as recited in claim 9, further comprising employing a menu by which the desired target is selected.
- 16. A method for inputting data to a target site on a host system, comprising:
 - connecting a multifunction peripheral to a host computer;
 - utilizing the multifunction peripheral to select a target site on the host computer for receiving a data set; and
 - scanning the data set into the target site from the multifunction peripheral.
- 17. The method as recited in claim 16, wherein the step of scanning includes the step of transferring the data set to an application on the host computer.
- 18. The method as recited in claim 16, wherein the step of scanning includes the step of transferring the data set to a selected file for storage on the host computer.
- 19. The method as recited in claim 16, further comprising connecting the host computer to a network; and transferring the data set to a network location.
- 20. The method as recited in claim 16, further comprising utilizing a user interface at the multifunction peripheral to select between a plurality of target sites.

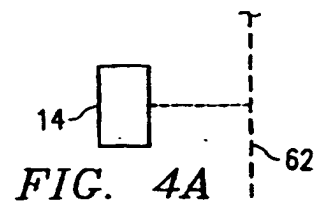
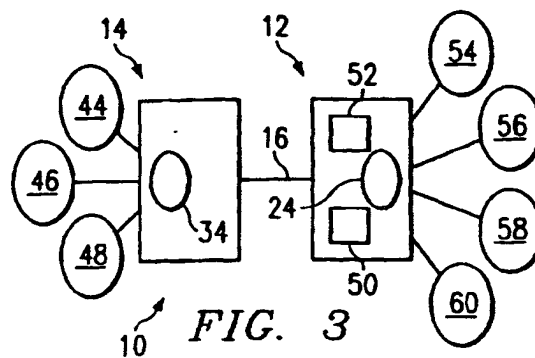
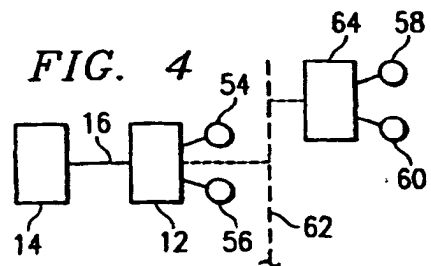
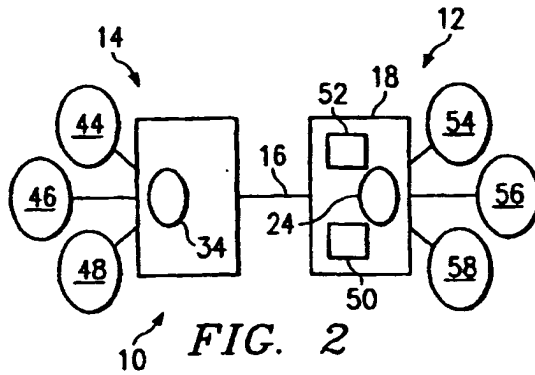
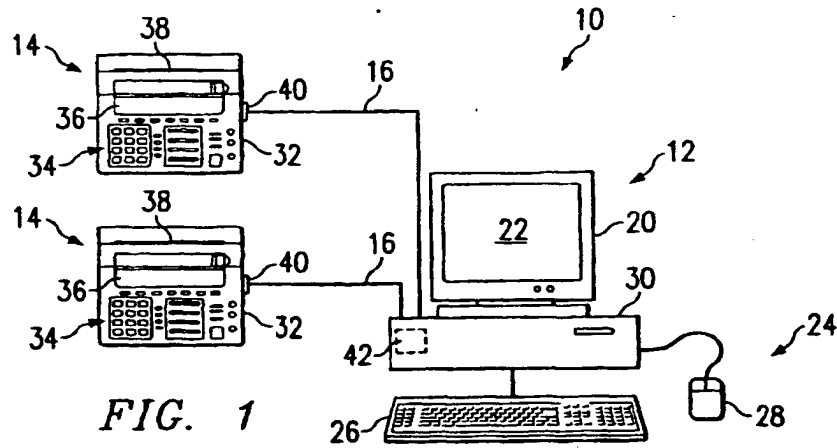
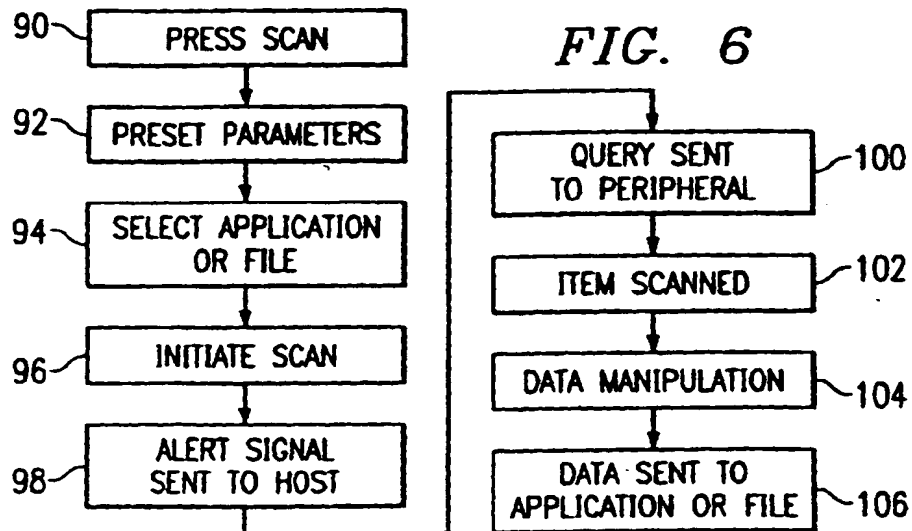
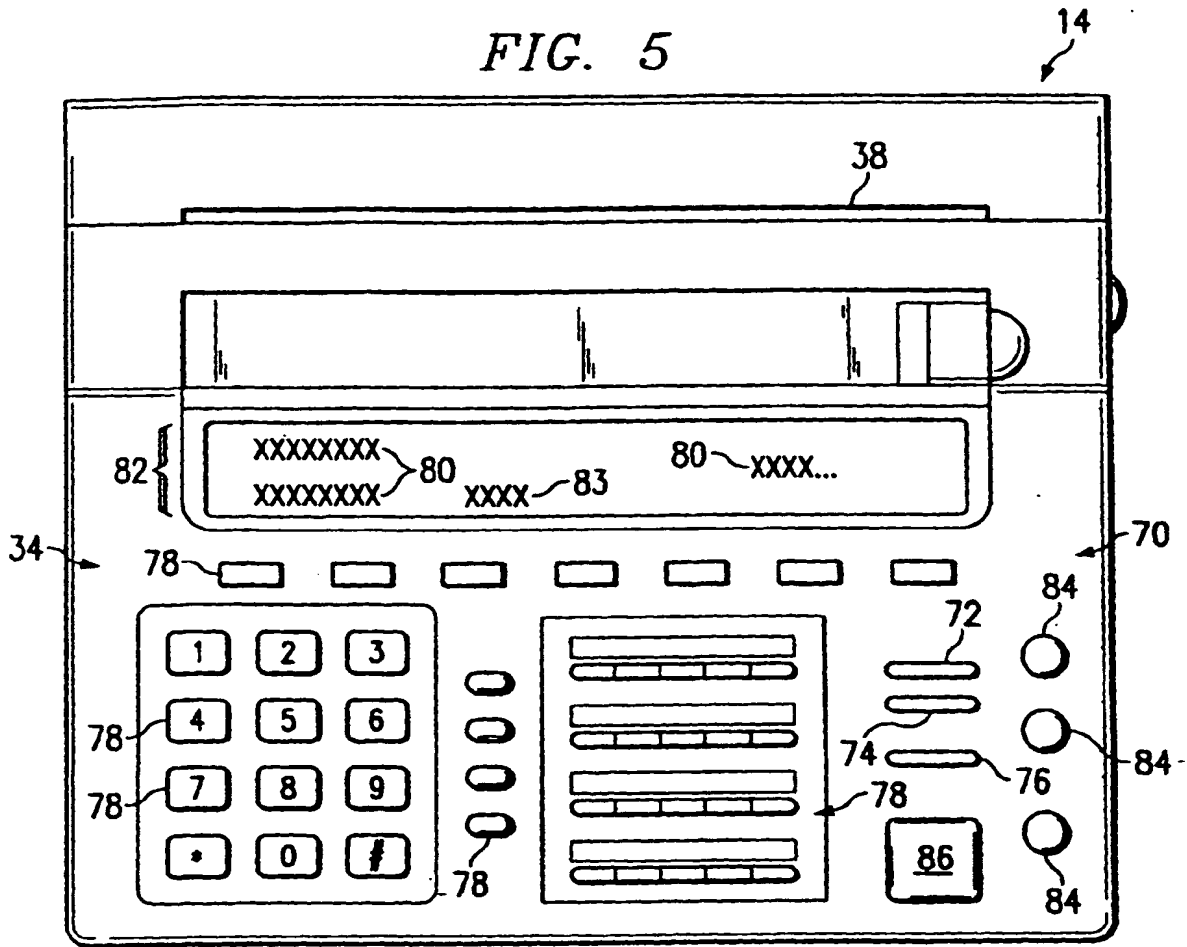


FIG. 5



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(11)

EP 1 030 507 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
18.07.2001 Bulletin 2001/29

(51) Int Cl.7: **H04N 1/00, H04N 1/327**

(43) Date of publication A2:
23.08.2000 Bulletin 2000/34

(21) Application number: **00300987.5**

(22) Date of filing: **09.02.2000**

(84) Designated Contracting States:
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MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

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(30) Priority: **19.02.1999 US 253197**

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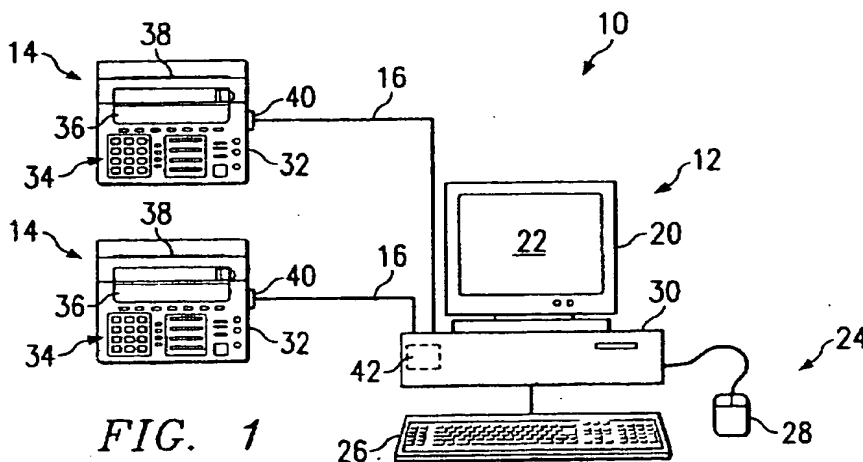


FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 00 30 0987

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			H04N
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 May 2001	Examiner Hubeau, R
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EP0 FORM 1503 03.82 (P04C01)

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EP 00 30 0987

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29-05-2001

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